high water
a floodplain management newsletter

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Floodplain zoning upheld in California courts

The American Planning Association has been closely following a court case, First English Evangelical Lutheran Church v. Los Angeles County, which concerns a California zoning regulation. In 1978, flash flooding destroyed Lutherglen, a 21-acre church camp owned by the First English Evangelical Church. Because of the flooding, Los Angeles County temporarily imposed a moratorium on new construction and reconstruction in the area including the Lutherglen site. The church then challenged the ordinance in California courts as an unconstitutional taking of property without due compensation.

The trial court dismissed the church's original case based on a California Supreme Court decision, Agins v. Tiburon, which held that "a landowner may not maintain an inverse condemnation action based upon charges that regulations alone can constitute a taking." This decision was appealed to the U.S. Supreme Court, which ruled that the property owner is entitled to financial compensation when property is taken as a result of regulations. However, the U.S. Supreme Court referred the case back to the California appeals court to decide if the Los Angeles County ordinance was an unlawful taking of property.

This May, the appeals court ruled "the church had failed to present sufficient facts for the court to determine that a taking had occurred." The court held that the interim ordinance did not deny all uses of the property and was in the interest of public safety. After the temporary moratorium expired, the county adopted zoning that permitted agricultural and recreational uses. The court stated the "interim ordinance only imposed a reasonable moratorium for a reasonable period of time while the [county] conducted a study and determined what uses, if any, were compatible with public safety." Evidently if the church applied for the necessary permits, it could have rebuilt most of its campground facilities.

The court concluded that the zoning regulations in question served "the highest of public interests — the prevention of death and injury." As Justice Earl Johnson noted, "we have no problem concluding these zoning restrictions represent a valid exercise of the public power and not an unconstitutional 'taking without compensation.' "

The church's attorneys plan an appeal to the California Supreme Court. They argue that the appeals court should have held a new trial to include new findings of fact. Watch this space for further developments.

Portions of this article taken from "Zoning News" and "Planning", American Planning Association, July, 1989.

New format for spring workshop

We are trying a new approach with our workshop this year. We will be working with several other state agencies to cover a variety of land-use management subjects. Presentations will be made on review procedures for subdivision and certificate of survey, comprehensive planning, and zoning. A video filmed in Montana on planning will be shown. Also covered will be the various aspects of the Montana Sanitation in Subdivisions Act and a history of the act and regulations. There will be an overview of water supply, sewage disposal, storm drainage, and solid waste disposal requirements under state law. Exemptions and exclusions to the Sanitation in Subdivisions Act will also be covered.

The workshop will include a session on floodplain map interpretation. We will be going through some exercises to determine the 100-year flood elevation using a floodplain map and flood insurance study. Current changes to floodplain regulations will be discussed. A session on building codes will also be offered.

The workshop will be held March 13 and 14, 1990, in Helena. It will be at the Cogswell Building, 1400 Broadway in Room C209. Workshop times are March 13, 9:00 a.m. to 5:00 p.m. and March 14, 8:30 a.m. to 3:30 p.m. A brochure, detailed agenda, and registration form will be sent out this winter.

Montana Department of Natural Resources and Conservation

Regulations for "manufactured homes" made final

On September 29, 1989, the Federal Register published the final rule affecting the placement or substantial improvement of manufactured homes in existing manufactured home parks or subdivisions in floodplain areas. This final rule brings an end to the lengthy rule change process that began in October 1986.

In October 1986, the National Flood Insurance Program changed the rules affecting mobile homes in the 100-year floodplain. FEMA decided to change the NFIP regulations due to rising costs of disaster relief for mobile homes in floodplain areas. FEMA found it was repeatedly paying out disaster relief for homes in some mobile home parks or subdivisions. Initially, FEMA redefined mobile homes and began calling them manufactured homes and created a new definition. Also, the October 1986 regulation change eliminated the "grandfather clause" for mobile home parks or subdivisions in the 100-year floodplain. The grandfather clause allowed mobile homes in existing parks or subdivisions in the floodplain to be replaced on existing sites without elevating the structure; only anchoring was required.

The rule change sparked protest from mobile home park owner associations across the country. In Montana many residents from Miles City spoke out against this new regulation. Miles City has a large number of mobile home parks and subdivisions in the Yellowstone and Tongue River floodplains. One hundred year flood depths average six to seven feet in some areas of Miles City.

As a result of opposition to the regulation, the NFIP decided to temporarily suspend the new regulations until it could gather public comments and study other options. FEMA extended the suspension of the October 1986 regulations several times. The May 19, 1989 Federal Register came out with the proposed revised manufactured home regulations. These were covered in our September 1989 issue of High Water. The final rule is similar to the proposed rule published on May 19, 1989, with some additional language concerning recreational vehicles and other clarifications.

This rule revision will have a varied effect on Montana communities participating in the National Flood Insurance Program. Many communities adopted our 12/15/86 model ordinance. This ordinance contains the stricter October 1986 manufactured home regulations. NFIP regulation 44 CFR 60.1 [d] specifically states that state and local regulations take precedence over NFIP criteria. Communities with stricter regulations will not have to revise their ordinances. FEMA has determined that communities without existing manufactured home parks or subdivisions will also be considered compliant regardless of the language in their ordinance because the grandfather provision would have no practical effect. Ordinance revisions will be required by FEMA for communities that both (1) have existing manufactured home parks or subdivision and (2) have the grandfather clause in their ordinance.

The Board of Natural Resources has also amended Montana's Administrative Rules for floodplain management. This will require communities subject to the Board's minimum standards to amend ordinances. DNRC is preparing a new model ordinance that will incorporate both the new state and federal standards.

We will be meeting with FEMA to discuss possible deadlines for ordinance revisions. We will keep local floodplain administrators informed of any deadlines set. The chief executive officer of every community was sent a copy of the new regulations in the Federal Register. If you have any questions about the new regulations or revising your ordinance, please contact us.

We are producing a public service video on flooding this year. If you have any flooding or flood damage on video tape, please contact Deeda Richard at 444-6654.

The greenhouse effect: heatwaves on Montana's floodplains?

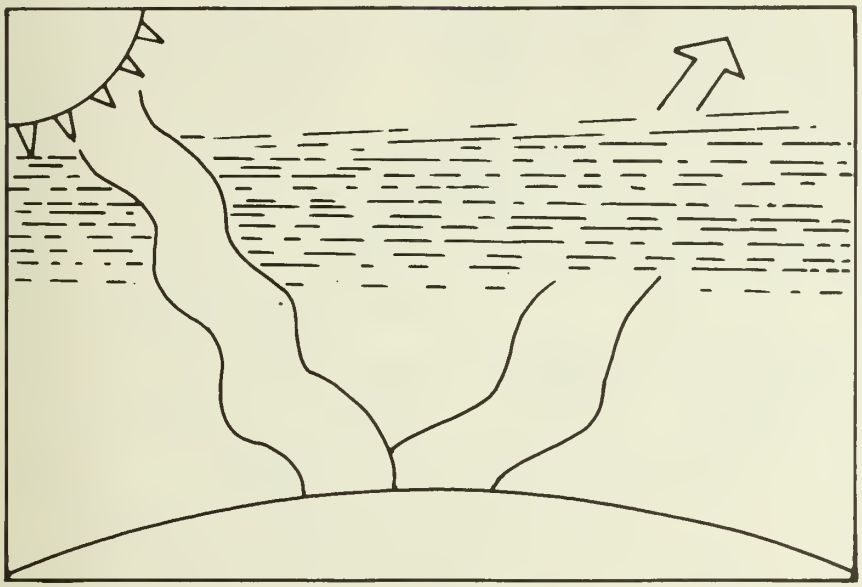
As we approach another Montana winter, the prospect of a little global warming may not sound as ominous as many recent news reports make it out to be. We've read the headlines and listened to the newscasts, but worries that the ice caps might melt are quickly displaced by fears that the home plumbing could freeze tonight. Judging from the news reports, even the scientists seem to disagree over the greenhouse effect — why should we worry?

In fact, the theory known as the greenhouse effect has been around for over 200 years and is one of the most well-established concepts in the scientific community. No one contests that heat is trapped in the earth's atmosphere by carbon dioxide (CO_2), methane, and other gases and particles. And scientists agree that atmospheric levels of CO_2 have increased by some 25 percent since 1850. Levels of other greenhouse gases have increased by even larger factors. What scientists are currently arguing about is the timing and nature of the consequences. Has global warming already started, or was the spate of warm years in the 1980s just a bump in the normal weather cycle? Will other natural processes offset atmospheric warming? What would be the effects of a 2° C rise in temperature? Of a 6° C rise?

Such questions do not call the greenhouse theory itself into doubt. Researchers are merely trying to refine the theory, to make it more precise and useful. If they can accurately predict how the world's climate will change in the next hundred years, resource managers and community planners will be better prepared to anticipate the host of likely problems. In a warmer world, Montana's floodplain administrators may need to adapt to changes in flood intensity and frequency, new streamflow management strategies, and shifting public demands.

But before we speculate about the specific implications for floodplain management in Montana, let's take a brief look at how the greenhouse effect works. We'll also look at both sides of the debate between the optimists and pessimists and review how some communities in the U.S. are preparing for rising temperatures.

The greenhouse effect is a natural phenomenon — our atmosphere allows sunlight to filter in, but then traps heat as it is radiated back up from the earth's surface (see diagram). The gases that are most effective at trapping radiated heat are CO_2, methane, chlorinated fluorocarbons (CFCs), and nitrous oxide. Since the Industrial Revolution, these gases have been released into the atmosphere at a rate far faster than nature intended. Levels of CO_2 have increased rapidly due to the large-scale burning of fossil fuels and deforestation. Methane is generated mainly by livestock and insects that digest plant material — a significant source considering the billions of bugs and plant-eating animals in the world, and all the more noteworthy because methane is 20 to 30 times more effective at trapping radiated heat than CO_2. Nitrous oxide is released into our air from cars and chemical fertilizers, and CFCs are a byproduct of the gradual breakdown of foam plastic and refrigerants.



The greenhouse effect: visible light and near- infrared wavelengths carrying the sun's energy easily filter through the atmosphere, but longer infrared wavelengths radiated by the earth are absorbed by greenhouse gases.

The rapid rate of change is what worries scientists. The most recent studies suggest that the global average temperature will rise 2° to 6° C during the next century. Plant and animal communities would not have time to adjust. Humans have proven remarkably adaptable, but such a dramatic temperature change is unprecedented in human history. And this is where the debate begins. Most scientists agree that the atmospheric temperature will rise, but how fast? When will it start? What will the effects be?

James Hansen, of NASA's Goddard Institute for Space Studies, says that he is "99 percent" certain that global warming is already occurring. In June of 1988 at a series of U.S. Senate committee hearings, Hansen testified that "the greenhouse effect has been detected and is changing our climate now. It is time to stop waffling and say that the greenhouse effect is here." Stephen Schneider of the National Center for Atmospheric Research in Colorado is less brazen but no less concerned, Writing for Science in February 1989, he stated, "the global data suggest that 0.5° C warming occurred during the past 100 years. Moreover, the 1980s appear to be the warmest decade on record."

On the other hand, a few scientists argue that temperature records have not been kept long enough to distinguish "bumps" in the climate from genuine long-term changes. Some experts believe that the earth is entering another ice age, which might offset any global warming. Others note that the oceans absorb significant amounts of CO_2 and this may, for a time at least, slow the greenhouse effect. Also, any recent, short-term rise in the earth's temperature may be related to a more active cycle of radiation from the sun.

With so many divergent opinions, how do we know who to believe? It's important to remember that virtually all scientists agree that greenhouse gases do trap heat in our atmosphere. Disagreement arises over the severity of the resultant global warming, with predictions ranging from zero heating thanks to offsetting factors to as much as a 6° C rise in the next 30 to 50 years. Some scientists suggest that the warming trend has been overestimated, but as Schneider likes to point out, it's equally likely that the greenhouse effect has been underestimated, that temperatures could rise higher and faster than anyone has predicted.

Given these uncertainties, many scientists are reluctant to forecast the effects of the warming trend on anything smaller than a global scale. The most recent studies depict polar ice melt causing an average sea level rise of 0.5 to 1.5 meters, disrupted rainfall patterns with many areas suffering drought, and depleted streamflows and soil moisture levels. Vast areas of the mid-latitude forests could dry up and turn to scrubby range. Increased evaporation may cause inland waters (such as the Great Lakes) to recede. But some regions may see an increase in precipitation and slightly cooler average temperatures due to denser or more frequent cloud cover.

A few communities in the U.S. are already reacting to these regional forecasts. Los Angeles County is launching a program to wean commuters from their personal cars to reduce auto emissions and is considering a county-wide ban on aerosols containing CFCs. Planners for a new storm sewer system in Charleston, South Carolina are taking into account the possible melting of polar ice and subsequent rise in ocean levels. Hurricane Hugo has given them additional incentive. Farm communities in Minnesota have been introduced to the idea that they may be in the heart of America's corn belt in 50 years.

Montanan's too are wondering what's in store for their state and how to prepare for a change in the weather. Localized forecasts are highly speculative, but both Hansen and the Environmental Protection Agency (EPA) have attempted to map the North American greenhouse climate. For Montana, Hansen's map indicates a 6° C average rise for the extreme northwest corner and a 2° C rise in the northeastern end of the state. The EPA has been studying the regional effects of global warming for several years. In October 1988, it published a report on the potential effects of climatic change in the U.S. The EPA study places western Montana in the Pacific Northwest region and predicts increased cloud cover and precipitation. The study states, "climate change may alter the timing and

volume of precipitation, increasing the risk of flooding and changing reservoir management practices." The intensity of storms may increase because of warmer air masses, and the EPA suggests that watershed management should be "modified to account for large maximum floods." Central and eastern Montana are included in the Great Plains region by the EPA. The agency's models predict "midsummer drought and heat, less groundwater recharge, and less groundwater and surface water available for irrigation." Water supply shortages are expected to be most severe in the arid western river basins, including the Missouri.

The EPA report also warns that "some large dams may become susceptible to failure if storm intensity increases. The spillways of many large dams are designed to pass a 'probable maximum flood' (an extreme flood event much greater than the 100-year flood). However, urbanization upstream from many dams is resulting in increased impervious surface (such as pavement) and increased peak runoff, and the probabilities of great floods, although remote, may increase due to climate change."

Until scientists are able to more accurately predict the next decade's weather, however, community planners are well advised to weigh the risks against the costs of preventive or contingency measures. Now is probably not the time to build a dike around your town or hire a rain maker. But maybe your community's flood preparedness procedures are due for an update, or development in the floodplain needs to be reviewed. Take these opportunities to consider how global warming might change the river that flows through your town, and look for possible long-term improvements that might also provide more immediate benefits. Montanan's know that it helps to be prepared, because if the climate doesn't change, the weather will.

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